

WHAT IS CLAIMED IS:

1. A method for enriching antigen-specific T lymphocytes comprising the steps:
 - a) contacting a heterogeneous population of antigen-specific T-lymphocytes with a matrix comprising MHC-antigen complexes wherein said MHC-antigen complexes comprise one or more antigens, for a period of time sufficient to allow the antigen specific T lymphocytes to interact with the matrix;
 - b) eluting the antigen-specific T lymphocytes from the matrix to provide an enriched population of antigen specific T lymphocytes.
2. A method for isolating antigen-specific T lymphocytes from a heterogeneous population of cells from a patient, comprising the steps:
 - a) contacting a heterogeneous population of antigen-specific T-lymphocytes from said patient with a matrix comprising MHC-antigen complexes wherein said MHC-antigen complexes comprise one or more antigens, for a period of time sufficient to allow the antigen-specific T lymphocytes to interact with the matrix;
 - b) expanding in culture the antigen-specific T lymphocytes on the matrix to provide an enriched population of said patient's antigen-specific T lymphocytes.
3. The method of claim 2 wherein the antigen specific T lymphocytes are eluted from the matrix before expanding in culture.
4. The method of claim 2 wherein the antigen-specific T lymphocytes are expanded in culture with one or more immobilized costimulatory molecules selected from the group consisting of anti-CD28 antibody, B7-1, B7-2, integrins, cell adhesion molecules, IL-2 and IL-4.
5. The method of claim 4 wherein the antigen-specific T lymphocytes are eluted from the matrix before expanding in culture.
6. A matrix for capturing antigen specific T lymphocytes, comprising a support having on its surface immobilized Class I peptide, and a predetermined amount of an antigen.
7. The matrix of claim 6 wherein the matrix is a bead.
8. The matrix of claim 6 wherein the antigen is a peptide.

9. A method for enriching antigen-specific T lymphocytes comprising the steps:
 - a) contacting a heterogeneous population of antigen-specific T-lymphocytes with the matrix of claim 4 for a period of time sufficient to allow the antigen specific T lymphocytes to interact with the matrix;
 - b) eluting the antigen-specific T lymphocytes from the matrix to provide an enriched population of antigen specific T lymphocytes.
10. The method of claim 9 wherein the matrix is a bead.
11. The method of claim 9 wherein the antigen is a peptide.
12. A method for isolating antigen-specific T lymphocytes from a heterogeneous population of cells from a patient, comprising the steps:
 - a) contacting a heterogeneous population of antigen-specific T-lymphocytes from said patient with the matrix of claim 4 for a period of time sufficient to allow the antigen-specific T lymphocytes to interact with the matrix;
 - b) expanding in culture the antigen-specific T lymphocytes on the matrix to provide an enriched population of said patient's antigen-specific T lymphocytes.
13. The method of claim 12 wherein the matrix is a bead.
14. The method of claim 12 wherein the antigen is a peptide.
15. The method of claim 12 wherein the antigen-specific T lymphocytes are eluted from the matrix before expanding in culture.
16. A matrix for capturing antigens, comprising a support having on its surface immobilized empty Class I peptide, wherein said Class I peptide is capable of binding one or more antigens.
17. The matrix of claim 16 wherein the matrix is a bead.
18. The matrix of claim 16 wherein the antigen is a peptide.
19. A method for enriching antigen-specific T lymphocytes comprising the steps:
 - a) binding one or more antigens to the matrix of claim 14;
 - b) contacting a heterogeneous population of antigen-specific T-lymphocytes with the matrix of step a) for a period of time sufficient to allow the antigen-specific T lymphocytes to

interact with the matrix;

c) eluting the antigen-specific T lymphocytes from the matrix to provide an enriched population of antigen specific T lymphocytes.

20. The method of claim 19 wherein the matrix is a bead.

21. The method of claim 19 wherein the antigen is a peptide.

22. A method for isolating antigen-specific T lymphocytes from a heterogeneous population of cells from a patient, comprising the steps:

a) binding one or more antigens to the matrix of claim 14;

b) contacting a heterogeneous population of antigen-specific T-lymphocytes from said patient with the matrix of step a) for a period of time sufficient to allow the antigen-specific T lymphocytes to interact with the matrix;

c) expanding in culture the antigen-specific T lymphocytes on the matrix to provide an enriched population of said patient's antigen-specific T lymphocytes.

23. The method of claim 22 wherein the matrix is a bead.

24. The method of claim 22 wherein the antigen is a peptide.

25. The method of claim 22 wherein the antigen-specific T lymphocytes are eluted from the matrix before expanding in culture.

26. The method of claim 22 wherein the antigen-specific T lymphocytes interact with the antigen with low-affinity.